REMARKS/ARGUMENTS

Claim 14 has been canceled. Claims 1-13 and new Claims 15 and 16 are active in the case. Reconsideration is respectfully requested.

The present invention relates to a polymer composition that is useful for the injection molding of molded objects.

Claim Amendments

The polymer material of Claim 1 has been amended by limiting the scope of the claimed composition to one which consists essentially of the four (meth)acrylate copolymer components, and limiting the range of the solution viscosity of component (a) to 45 to 55 ml/g as described on page 8, lines 26-30 of the text. Improvements in language structure have also been made to the claim.

Minor amendments have been made to Claims 2-11.

The form of each of Claims 12 and 13 has been changed to conventional format for a molded article and a method for producing a molded article by injection molding.
Claim 14 has been canceled in favor of new Claim 15 and new Claim 16 is a combination of amended Claim 1 and Claim 2. None of the amendments are believed to have introduced new matter into the case. Entry of the amendments and new claims into the record is respectfully requested.

Invention

It is known that commercially available molding compositions that are based on polymethyl methacrylate have a spectrum of highly satisfactory properties, but have the disadvantage that the individual requirements within the property profile demanded for the production of high-quality injection molded parts are not consistently achieved. The objective

of the present invention is to provide an improved balanced property profile for moldings of polymethyl methacrylate.

Claim Rejection, 35 USC 103

Claims 1-3 stand rejected based on 35 USC 103(a) as obvious over Kress et al, U. S. Patent 4,895,898 in view of Suetterlin et al, U. S. Patent 4,513,118. This ground of rejection is respectfully traversed.

The technology of the Kress et al patent fundamentally differs from that of the present invention because it describes a thermoplastic molding material that is based on thermoplastic polycarbonate that is modified with an acrylate rubber and a copolymer component based on a styrene compound or a methacrylate. The composition further contains a copolymer component (D) which is based upon styrene/methacrylate monomers. The discovery described in the patent is to use a copolymer (D) that has an intrinsic viscosity of 2 to 10 ml/g which provides for a polymer blend that has good flow characteristics. On the other hand, the claimed polymer mixture of the present invention is not a modified thermoplastic polycarbonate composition, but rather is limited to a mixture of four (meth)acrylate copolymers which are as defined in the present claims. No such teaching of a four component blend of (meth)acrylate polymers is taught by the patent. Rather, the patent teaches the modification of a polycarbonate by a combination of a rubber material formed by grafting one of more of styrene, methylstyrene, substituted styrene and methyl methacrylate and (meth)acrylonitrile, maleic anhydride and N-substituted maleimide onto a rubber having a glass transition temperature of $\leq 10°$ C with two primarily styrene compound based copolymers (components C and D).

The Examiner refers to the intrinsic solution viscosities of components (C) and (D) of the patent. However, the viscosities of the patent for the two components can not be directly

compared to the solution viscosities of components (a), (c) and (d) of the present composition, because the present viscosities are measured as chloroform solutions while the reference employs dimethylformamide as the solvent for the viscosity measurements of the (C) and (D) components.

Since the reference does not suggest the present polymer composition as claimed, it does not suggest objects prepared by injection molding the present polymer composition, nor the present method of forming injection molded articles. The reference also does not suggest the present polymer composition in which the amounts of the four (meth)acrylate components are specified as in Claim 16. Accordingly, the invention as claimed in its several embodiments is believed distinguished over Kress et al.

Applicants submit that the Sutterlin et al patent, in fact, is not germane to the disclosure of Kress et al, because it is directed to an emulsion polymer that acts as an impact improving agent for primarily homopolymeric methyl methacrylate of copolymers of methyl methacrylate with at least one ethylenically unsaturated monomer (col 6, lines 27-35). There is no teaching or suggestion in either of Kress et al or Sutterlin et al of the desirability of introducing an emulsion copolymer, primarily based on methyl methacrylate polymers, for molding formulations based on thermoplastic polycarbonate. In fact, the graft copolymer (B) component of the composition of Kress et al is an impact strength improving agent for the product molding composition, since it is a rubber material of several monomers graft copolymerized on a rubber base. How then do the combined references suggest the present invention in its several embodiments?

Claim 11 stands rejected based on 35 USC 103(a) as obvious over Kress et al, U. S. Patent 4,895,898 in view of Suetterlin et al, U. S. Patent 4,513,118 and further in view of Niessner et al, U.S. Patent Publication 2001/0007890. This ground of rejection is respectfully traversed.

Claim 11 is directed to a secondary aspect of the invention of a particular compound as a mold release agent. This aspect of the present invention is not an aspect upon which patentability of the present invention rests. Moreover, importantly, the publication does not contain any disclosure which improves upon the deficiencies of either Kress et al or Sutterlin et al with respect to the present invention as claimed. Since Claim 11 ultimately depends upon Claim 1, it incorporates all of the limitations of Claim 1 therein. Accordingly, Claim 11 is not believed to be obvious in view of the cited prior art and withdrawal of the rejection is respectfully requested.

Claim 9 stands rejected based on 35 USC 103(a) as obvious over Kress et al, U. S. Patent 4,895,898 in view of Suetterlin et al, U. S. Patent 4,513,118 and further in view of Suzuki et al, U.S. Patent Publication 2002/0099135. This ground of rejection is respectfully traversed.

The Examiner states that the prior art does not disclose the subject matter of Claim 9. Applicants agree. In fact, Claim 9 defines a preferred embodiment of the methacrylate copolymer of component (d) which only has context as the fourth component of the claimed polymer mixture of the present invention. As seen from the discussion above, none of the prior art references that have been cited teach or suggest the present four (meth)acrylate copolymer mixture of the present invention. The cited primary reference, i.e., the Kress et al patent, discloses a modified thermoplastic polycarbonate composition. On the other hand, the present invention is not such a composition, but rather is an improved mixed (meth)acrylate copolymer composition. The prior art does not teach or suggest such a composition. Accordingly, withdrawal of the rejection is respectfully requested.

Double Patenting Rejection

Claims 1-12 and 14 stand rejected based on the judicially created doctrine of obviousness-type double patenting over Claims 30-40, 42, 45 and 46 of copending application Serial No. 10/575,929. This ground of rejection is respectfully traversed.

The outstanding ground of rejection is a provisional rejection, since patentable subject matter in the copending application has not been indicated. Applicants will take appropriate action in this case when claims have been allowed in the later filed application.

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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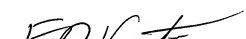

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